

**UNITED STATES DEPARTMENT OF COMMERCE****Patent and Trademark Office**

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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
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09/511,986 02/24/00 WILLIAMS

V 4208US (99-0

MMC2/0809

EXAMINER

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PO Box 2550
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NADAV, O

ART UNIT

PAPER NUMBER

2811

DATE MAILED:

08/09/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

| | |
|--------------------------------------|---------------------------------|
| Application No. 09/511,986 | Applicant(s) Williams |
| Examiner ORI NADAV | Art Unit 2811 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on Jul 5, 2001
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-109 is/are pending in the application.
- 4a) Of the above, claim(s) 1-46, 69-74, and 91-109 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 47-68 and 75-90 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on Feb 24, 2000 is/are objected to by the Examiner.
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) All b) Some* c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) Notice of References Cited (PTO-892)
- 16) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2,7
- 18) Interview Summary (PTO-413) Paper No(s). _____
- 19) Notice of Informal Patent Application (PTO-152)
- 20) Other: _____

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DETAILED ACTION

Election/Restriction

1. Applicant's election without traverse of claims 47-68 and 75-90 in Paper No. 9 is acknowledged.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a) because they fail to show a dielectric layer on an active surface of the semiconductor die as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 47-68 and 75-90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kepchar (4,138,672).

Regarding claims 47-68, Kepchar teaches in figure 1 a semiconductor device assembly comprising first and second semiconductor device components 16, 18 comprising carrier substrate 16 and a semiconductor die 18 including at least one contact pad 12, 14, 26 (column 3, line 53), and at least one conductive element 22, 26 comprising a plurality of superimposed, contiguous, mutually adhered layers comprising thermoplastic conductive elastomer 22 and metal connecting the contact pads, extending across a peripheral edge of one of the first and second semiconductor device components.

Although Kepchar does not explicitly state a conductive element comprising a plurality of superimposed, contiguous, mutually adhered layers, layers 22 and 26 are plurality of superimposed, contiguous, mutually adhered layers. Therefore, Kepchar teaches one conductive element comprising a plurality of superimposed, contiguous, mutually adhered layers. Thus, the claimed structure is considered to be at least obvious over Kepchar's structure.

Regarding claim 75, although Kepchar does not explicitly state a conductive element connecting contact pads, conductive element 26 located above conductive element 22

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is connected to contact pad 26 located above die 18. The broad recitation of the claim does not preclude the conductive element and the contact pad from being a continuous layer.

5. Claims 47-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hata (4,891,635).

Hata teaches in figures 1-2 a semiconductor device assembly comprising first and second semiconductor device components comprising carrier substrate 9 (figure 6) and a semiconductor die (column 4, lines 47-50) including at least one contact pad 60 and at least one conductive element 52, 53, 3 comprising a plurality of superimposed, contiguous, mutually adhered layers comprising thermoplastic conductive elastomer 52, 53 and metal 3 connected to the contact pad.

Although Hata does not explicitly state a conductive element comprising a plurality of superimposed, contiguous, mutually adhered layers, layers 52, 53 and 3 are plurality of superimposed, contiguous, mutually adhered layers. Therefore, Kepchar teaches one conductive element comprising a plurality of superimposed, contiguous, mutually adhered layers. Thus, the claimed structure is considered to be at least obvious over Hata's structure.

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6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References C-F and N are cited as being related to

Papers related to this application may be submitted to Technology center (TC) 2800 by facsimile transmission. Papers should be faxed to TC 2800 via the TC 2800 Fax center located in Crystal Plaza 4, room 4-C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Group 2811 Fax Center number is (703) 308-7722 and 308-7724. The Group 2811 Fax Center is to be used only for papers related to Group 2811 applications.

Any inquiry concerning this communication or any earlier communication from the Examiner should be directed to *Examiner Nadav* whose telephone number is (703) 308-8138. The Examiner is in the Office generally between the hours of 7 AM to 3 PM (Eastern Standard Time) Monday through Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas, can be reached at (703) 308-2772.

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Any inquiry of a general nature or relating to the status of this application should be directed to the **Technology Center Receptionists** whose telephone number is **308-0956**

Tom Thomas
TOM THOMAS
SUPERVISORY PATENT EXAMINER

Ori Nadav

July 31, 2001.